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Technical Report - Study/Services
Analysis of PC-2001 NIC Backplane Adapter

18 October 1989
Cargo Movement Operation System (CMOS)

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SECTION I

INTRODUCTION: This report describes a deficient engineering design in the Ethernet transceiver drop cable connector on the PC-2001 NIC. (See Attachment 1)

SUMMARY: Problems in the sliding lock and connector mechanism on the PC-2001 NIC (Network Interface Card) can prevent the terminal from accessing the network and can lead to premature failure of the NIC.

CONCLUSION: The PC-2001 NIC must be modified to properly locate the connector assembly to ensure proper card placement in the computer. This will prevent early NIC failure and help ensure the terminal has access to the network. This modification would be difficult to implement in the field.

SECTION II

ANALYSIS: During the installation of the PC-2001 NIC in the Z-248 microcomputers, we observed that the sliding lock mechanism (see Attachment 1) used to secure the transceiver drop cable seemed to be too wide for the slot in the back of the computer. Closer examination showed the assembly width was not the problem, but rather it was not properly placed on the card's mounting bracket. This connector and lock assembly placement was incorrect on all PC-2001 NICs used in the lab installations. The improper placement prevents the card from being installed squarely on the microcomputer's mounting plate. Since the card cannot be correctly aligned, the board is flexed which can lead to early component or trace failure. Additionally, we observed that the sliding lock mechanism is prevented from working correctly as it binds on the microcomputer's mounting plate. Since the locking mechanism binds, it does not securely hold the transceiver drop cable. In two instances, the drop cable fell out of the assembly under its own weight. Any additional strain simply aggravated the condition.

RECOMMENDATION: This problem can only be corrected by increasing the distance between the actual connector and the NIC component board. The relationship between the NICs connecting bracket and the printed circuit board is correct. Once the actual connector is raised above the printed circuit board, the metal connecting bracket will have to be remounted.

PC-2001 NETWORK INTERFACE CARD

